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ABSTRACT

Designed to explore differences in interactions between groups of teams entered in the Texas Future Problem Solving Program (TFPS), the study examined the question-response-feedback pattern of interaction used by four TFPS gifted sixth grade teams. TFPS teams are encouraged to formulate 20 responses to a situation in a given amount of time. Group A was led in discussion by a teacher/facilitator asking literal, inferential, and comprehension questions following brainstorming of TFPS situations. Group B Ss participated in the brainstorming but not the teacher/facilitator led questioning. Group A Ss produced more responses than Group B Ss using the peer to peer method. (CL)

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COMPARISON OF QUESTION-RESPONSE FEEDBACK INTERACTIONS OF GIFTED STUDENTS, DURING THE TEXAS FUTURE PROBLEM SOLVING PROGRAM, AS AN EFFECTIVE DELIVERY SYSTEM

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Descriptive Research

Comparison of Question - Response-Feedback Interactions of Gifted Students, During the Texas Future Problem Solving Program, As An Effective Delivery System

This study is designed to explore differences in interactions between groups of teams entered in the Texas Future Problem Solving Program. This study will add depth to the question-response-feedback pattern of interaction that is already considered to be effective, and aid in the formulation of future research hypotheses. The group in this study will be the four TFPS teams in the sixth grade gifted class at Angleton Middle School. Teams for this study will be randomly selected. The hypothesis in this study will be, does effective questioning by teacher/facilitator lead to behaviors that focus on depth rather than number of responses. The goal of TFPS teams is to formulate 20 responses to a situation in a given amount of time. By using the question-response-feedback with two teams and two other teams working without the guided questioning, which will do better under the guidelines of TFPS will be the major objective of this study.

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The goal of effective teaching practices and delivery systems is to determine teacher behaviors that enhance student learning. Process-product researchers have found a positive correlation between a stimulus-reponse-feedback pattern of teacher/pupil interaction and student achievement (Anderson, 1979; Brophy, 1974).

Gifted children with high verbal ratings on intelligence tests are likely to be highly reflective of desire for direct and immediate feedback (Kaufman, 1979). The pattern follows the theory of stimulus-response set forth by B.F. Skinner (Skinner, 1938). In the Texas Future Problem Solving Program this follows the series on interaction where (1) Teacher provides information in the form of a situation, (2) Students are asked what problems might arise from this situation, (3) Immediately, the teacher responds to the student with task related feedback. The teacher continually guides the student using probing questions.

While the process-product researchers have deemed this pattern of questioning effective, it poses a noted similarity to the criticized concept of the much structured delivery system of turn-taking. Duffy (1982) defined turn-taking as (1) Teacher ask a question, (2) A child is chosen to respond, (3) The child responds, (4) The teacher reinforces the correct response. The criticism with this model is that it focuses on achieving the correct response rather that the learning process of acquiring knowledge.

The stability of this questioning process is directly related to the situation in which the teacher is involved. Some

techinques which are found to be successful with certain students in a particular class may not work with students in another setting (Duffy, 1983).

Mitzel (1960) first defined the process-product method of teacher effectiveness. His paradigm consists of three criteria: "presage", "process", and "product". Presage criteria included both pre-existing teacher characteristics and teacher competencies; process criteria corresponded to teacher preformance variables; and product criteria corresponded to teacher effectiveness. Mitzel studies were the beginning of sorting out the varibles of teacher effectiveness so that the researcher could study them separately.

Brophy (1979) described the learning environment in the classroom of the effective teacher during the process-product method. He stated that the learning environment in the effective teacher's classroom differed from the learning environment in the less effective teacher's classroom in the following ways: the pupils were more orderly; the teacher was less permissive and spent less time "managing" the class; the pupils received more praise and fewer rebukes. Brophy's comment that teachers who are more effective instructors tend also to be more effective managers is consistent with these results.

Educative questions are the mainstay of the Question-Respones-Feedback Model. Educative questions advance classroom processes and products. They facilitate student thinking and enhance class participation. Teachers must prepare a question in order for it to be an educative question. They must conceive it, formulate it, and use it (Dillon, 1982).

A question asking style serves several legitimate pedagog-

ical functions, but it may produce negative effects on students' cognitive, affective, and expressive processes by increasing students' passivity and dependence; and by limiting students' thought and responses (Dillon, 1978).

An alternative approach enhances participation in other ways. Boggs (1972) stated that peers more readily engage in question-response exchanges with each other than with superiors, and student responses to other students are usually longer and more complex than responses to the teacher. Furthermore, by breaking the chain that links final comment with subsequent questions, the approach provides a conversational beat between exchanges, a beat entirely absent from the teacher-student exchange (Mischler, 1978).

Declarative statements can also be used to evoke student responses. Research shows that the responses may be longer and more complex than responses to questions (Boggs, 1972; Colby, 1961; Wood and Wood, 1983). A declarative statement is a useful tool for enhancing the question-response-feedback model.

Process-product research is for this study correlational research; the results obtained are only descriptive and do not establish cause and effect relationships. This study is conducted under the rules of the Texas Future Problem Solving Program which has time limits for student responses. Because of these rules, the results may differ from a regular classroom setting.

METHOD

Subjects and Settings: Participating in the study were four student teams from the sixth grade gifted class at Angleton Middle School. All procedures conducted were in the students' regular classroom under guidelines of the TFPS Program.

Control Conditions: Student teams were randomly selected into groups, A and B. Both groups received the same research materials for the TFPS situations.

Questioning-Distinguishing Condition: Group A was lead in discussion by teacher/facilitator asking literal, inferential, and comprehension questions following brainstorming of TFPS situations. Group B participated in the brainstorming but did not receive the teacher/facilitator led questioning.

PROCEDURE

This research is a descriptive study of the responses generated by Groups A and B during the timed Step One of TFPS. Both groups had twenty minutes to list as many problems that might arise from the given situations.

During the teacher led discussion, in the class period prior to the timed section, audiotapes were used to categorize the question-response-feedback of Group A. Group B was left to question themselves in a peer to peer situation. Group B was not recorded during this time period. Group A questions-responses were categorized as follows: teacher/facilitator questions: (1) researched based, (2) seeking clarification, (3) increasing student awareness, (4) reinforcing student response, (5) asking student to add information. Student responses were classified as: (1) accepted, (2) incomplete or partically

correct (3) no response. Teacher/Facilitator feedback was categorized into (1) acknowledgement of the response, (2) positive feedback, (3) negative feedback.

After the questioning sessions, Group A Teacher/Facilitator led, Group B peer to peer, both groups were given twenty minutes to generate their list of problems. This procedure is in accordance wiht TFPS rules.

RESULTS

Table 1: Group A Question-Response-Feedback (45 minutes)

Category:	Number of times occuring	Percentage
True/False Questions	38	-
1. Researched Based	11	28.9
2. Seeking Clarification	6	15.7
3. Increasing Awareness	2	05.2
4. Reinforcing Response	7	18.4
5. Asking additional info.	12	31.5
Student Responses	57	-
1. Accepted	39	86.4
2. Incomplete	18	31.5
3. No response	0	00.0
True/False Feedback	-	-
1. Acknowledge Response	54	94.7
A. Positive Response	52	96.2
B. Negative Feedback	2	03.7
2. No Response	3	05.2

Table 2: Number of Problems generated (20 minutes)

Group:	Number of responses Step 1 TEPS
Group A	27 (7 over maximum no.)
Group B	13 (1 under maximum no.)

DISCUSSION

Group A with the Teacher/Facilitator led questioning was able to produce more responses than Group B using peer to peer method. However, these results are very limited. The purpose of the study was to explore the impact of the Question-Response-

Feedback model as an effective tool for coaching a TFPS team. This study may lead to future research with larger samples and more tightly controlled variables. No specific conclusions or generalizations are appropriate at this time.

This study was structured in the process-product research findings. The research sought to add depth to the existing knowledge by showing that a pattern of asking questions, receiving a response, and providing feedback tends to be an effective teaching behavior. Although it is speculated that all teachers tent to use the stimulus-response model of questioning to some exten , this research was to use it as a specific instrument in preparing teams for TFPS competition.

CONCLUSION

Exploratory descriptive studies such as this one are limited in generalizability. Although, these findings will allow for the formulation of new research hypothesis. Exploratory studies may reveal discrete behaviors of effective teaching that may not, in this case, be statistically significant because of the limitations of the competition rules. Yet, the results are possibly qualitatively superior. These behaviors may be described as how to most successfully and effectively teach within a specific context.

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